Notice of Allowability	Application No. 10/763,488	Applicant(s) BRETL ET AL.	
	Examiner Dac V. Ha	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *application filed on 01/23/04*.

2. ☒ The allowed claim(s) is/are *62-87, renumbered as 1-26, respectivley*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Dac V. Ha
Primary Examiner
Art Unit: 2611

Allowable Subject Matter

1. Claims 62-87 are allowed.

2. The following is a statement of reasons for the indication of allowable subject matter:

The present invention relates to apparatus for interleaving and deinterleaving signal. Such technique is widely used in communication system. However, prior art of record, taking individually or collectively, fails to fairly teach such apparatus in particular, including "a first convolutional deinterleaver characterized by deinterleave parameters B(1), M(1) and N(1), wherein the first convolutional deinterleaver is arranged to convolutionally deinterleave the received signal in accordance with the deinterleave parameters B(1), M(1) and N(1) to produce a first deinterleaved signal, wherein the first convolutional deinterleaver comprises B(1) paths, wherein M(1) is a unit delay through a path, and wherein N(1) = M(1)B(1); and a second convolutional deinterleaver characterized by deinterleave parameters B(2), M(2) and N(2), wherein the second convolutional deinterleaver is arranged to convolutionally deinterleave the first deinterleaved signal in accordance with the deinterleave parameters B(2), M(2) and N(2) to produce a second deinterleaved signal, wherein the second convolutional deinterleaver comprises B(2) paths, wherein M(2) is a unit delay through a path, wherein N(2) = M(2)B(2), and wherein each of the first and second convolutional deinterleavers is synchronized to the frame synch segment" in independent claim 62 (claims 63-74 depend therefrom); and "a first convolutional interleaver characterized by interleave parameters B(1), M(1) and N(1), wherein the first convolutional interleaver is

arranged to convolutionally interleave data to be transmitted in accordance with the interleave parameters B(1), M(1) and N(1) to produce a first interleaved signal, wherein the first convolutional interleaver comprises B(1) paths, wherein M(1) is a unit delay through a path, and wherein m(1) = M(1)B(1); a second convolutional interleaver characterized by interleave parameters B(2), M(2) and N(2), wherein the second convolutional interleaver is arranged to convolutionally interleave the first interleaved signal in accordance with the interleave parameters B(2), M(2) and N(2) to produce a second interleaved signal, wherein the second convolutional interleaver comprises B(2) paths, wherein M(2) is a unit delay through a path, and wherein N(2) = M(2)B(2), and wherein each of the first and second convolutional interleavers is synchronized to a frame synch segment" in independent claim 75 (claims 76-87 depend therefrom). Thus, claims 62-87 are found to be novel and unobvious over prior art of record.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Piret et al. (US 6,404,360) discloses Interleaving Method For The Turbocoding Of Data.

Sandin et al. (US 5,946,357) discloses Apparatus, And Associated Method, For Transmitting And Receiving A Multi-Stage, Encoded And Interleaved Digital Communication Signal.

Fimoff (US 6,608,870) discloses Data Frame For 8 MHZ Channels.

Edison et al. (US 2004/0261002) discloses Iterative Decoder Employing Multiple External Code Error Checks To lower The Error Floor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-3086. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dac V. Ha
Primary Examiner
Art Unit 2611